

UNITED STATES OF AMERICA
POSTAL REGULATORY COMMISSION
WASHINGTON, DC 20268-0001

Periodic Reporting
(Proposal Six)

Docket No. RM2020-13

CHAIRMAN'S INFORMATION REQUEST NO. 5

(Issued December 10, 2020)

To clarify the Postal Service's petition to consider proposed changes in analytical principles, filed September 15, 2020,¹ and responses to Chairman's Information Requests Nos. 1 and 4 filed on October 14, 2020 and November 19, 2020, respectively,² the Postal Service is requested to provide written responses to the following questions. The responses should be provided as soon as they are developed, but no later than December 18, 2020.

1. Please refer to the Variability Report that provides "flats workload peaks in October-November whereas letter workload typically peaks in December [:] both AFSM 100 and FSS operations consistently show substantially above-trend productivity during the October-November peak period [while the DBCS] shows a small above-trend productivity peak in December." Variability Report at 12, 16. Please also refer to Response to CHIR No. 4 that states "[a]s a preliminary indication of the magnitude of [seasonal] effects, the Postal Service estimated a model without lagged TPF, interacting a peak-period dummy variable $Dp(t)$ with

¹ Petition of the United States Postal Service for the Initiation of a Proceeding to Consider Proposed Changes in Analytical Principles (Proposal Six), September 15, 2020 (Petition); see A. Thomas Bozzo & Tim Huegerich, Analysis of Labor Variability for Automated Letter and Flat Sorting, Christensen Associates, September 15, 2020 (Variability Report).

² Responses of the United States Postal Service to Questions 1-11 of Chairman's Information Request No. 1, October 14, 2020 (Response to CHIR No. 1); Responses of the United States Postal Service to Questions 1-4 of Chairman's Information Request No. 4, November 19, 2020 (Response to CHIR No. 4).

the natural log of TPF.” Responses to CHIR No. 4, question 2.b. The Postal Service also states “[t]he models use a December peak for DBCS operations and an October-November peak for AFSM100 and FSS operations.” *Id.*

- a. Please confirm that the whole month of December was considered a peak-period for DBCS operations and two full months of October and November formed a peak period for AFSM100 and FSS operations. If not confirmed, please explain how the peak periods were determined for different types of operations.
 - b. Please confirm that October-November was chosen as a peak period for AFSM100 and FSS operations based on productivity trends. If not confirmed, please describe the criteria used to determine the peak period for AFSM100 and FSS operations.
 - c. Please confirm that December was chosen as a peak period for DBCS operations based on productivity trends. If not confirmed, please describe the criteria used to determine the peak period for DBCS operations.
 - d. Please discuss whether the peak period for different types of operations might be different for different facilities or groups of facilities (*e.g.*, depending on the size of the facility or its geographical location). Please provide the analysis in support of your conclusion, if applicable.
2. Please refer to the FY 2019 MODS Manual³ that states “TACS wants to ensure all employees are paid; therefore, if an operation number has not been assigned to an employee, the clock ring is in an error status and more time and dollars are spent to correct. To counteract this situation, TACS has assigned MODS operation numbers based on the LDCs of the employee.” FY 2019 MODS Manual at 22.

³ Docket No. ACR2019, Library Reference USPS-FY19-7, December 27, 2019 (FY 2019 MODS Manual), PDF file “M-32 MODS Handbook.pdf.”

- a. Please confirm that an employee that works at a mail processing facility needs to be assigned to a MODS operation during each hour of the workday in order to be paid for all hours he/she works during the day. If not confirmed, please explain.
 - b. Please discuss whether the procedure described in the quoted statement may result in biased workhour variability estimates. In your response, please discuss whether, to ensure the employees are paid for a full workday, there might be any incentives and/or opportunities to overstate the reordered workhours the employee spends operating DBCS, AFSM100, and FSS machines.
3. Please refer to the Variability Report explaining that “[t]he workhours associated with operating running machines cannot be separated from the workhours for the other component activities.” Variability Report at 8.
 - a. Please confirm that the workhours for an individual worker in a workday are calculated as the sum of hours during which he/she is assigned to the machine and not the sum of hours when he/she actually operates the machine. If not confirmed, please explain how the workhours are calculated.
 - b. Please identify the activities included in the workhours variable used for regression analysis in Proposal Six.
4. Please refer to the Variability Report explaining that “[t]he Runtime [includes] operating the running machine: loading the machine, sweeping the output bins or stackers in the course of the run, clearing jams, monitoring the machine operation (for manual operations, the equivalent is the time spent actually sorting mail into the cases or other receptacles)”. Variability Report at 6-7. In addition, Variability Report indicates that “the machine runtime is observed, since it is reported to MODS via the webEOR system.” *Id.* at 8. Please confirm that the

runtime for a machine in a workday is calculated for different MODS activities listed above as the sum of the actual hours when the machine was operated during that day, and not the hours that were scheduled for that day. If not confirmed, please explain how the runtime is calculated.

5. Please refer to the Variability Report that states “the intercepts... [in the regression equations for machine runtime and workhours estimated using monthly data by plants (facilities)] potentially depend on volume-independent technological parameters, management considerations affecting staffing levels locally, and specific plants’ processing network roles. Since these may differ systematically across facilities, the model allows for facility-specific intercepts. Failing to account for unobserved non-volume heterogeneity among facilities generally would lead to biased and inconsistent elasticity coefficient estimates.” Variability Report at 20.
 - a. Please explain in detail how each of the three factors mentioned above (as well as other factors if applicable) may differ across facilities and discuss how these differences could affect the variability estimates for machine operations.
 - b. Please discuss whether the Postal Service could account for the unobserved “non-volume heterogeneity among facilities” by including explanatory variables that would capture the non-volume heterogeneity factors described above or others (if applicable) without using a fixed-effects model.
 - c. Please discuss whether such factors as average machine vintage, average number of employees per machine, number of bins per machine, and number of machines in each facility could cause non-volume heterogeneity among facilities.

- d. If any data on factors which can cause non-volume heterogeneity among facilities is available, please provide this data for each machine type (DBCS, AFSM100, and FSS) and month/facility.
6. Please refer to the Variability Report that states “[w]hile productivities vary across plants for a number of reasons, extreme values may reflect idiosyncratic errors or other factors not fully captured by the model. Accordingly, the regression samples exclude observations where the measured labor productivity is below the 5th percentile or above the 95th percentile of the distributions of site-month observations.” Variability Report at 21.
 - a. Please discuss whether the Postal Service considered or applied the Cook’s D statistics to identify and remove outliers as it has previously done in variability analysis.⁴ Please explain why this method was rejected and provide the underlying documentation, if applicable.
 - b. Please discuss any other methods the Postal Service considered or applied to address the issue of “extreme values” in the model. Variability Report at 21. Please explain why these methods were rejected and provide the underlying documentation, if applicable.
7. Please refer to Library Reference USPS-RM2020-13/1, September 15, 2020, folder “Analysis,” data file “analysis_set.dta.” The Commission’s preliminary analysis shows that certain facilities are included in the sample used for regression model despite the data on these facilities was available by a few months only. In addition, the analysis shows that more November-December observations were excluded from the analysis than observations for other months.

⁴ See *e.g.*, Docket No. RM2014-6, Library Reference USPS-RM2014-6-1, June 20, 2014, Word file “Rpt.Updat.PHT.Cost.Cap.Variab.docx” (Report on Updating the Cost-to-Capacity Variabilities for Purchased Highway Transportation) at 23.

- a. Please confirm that certain facilities have less than 10 months of data in the DBCS workhour regression model, and, specifically, these are facilities with site id 11, 46, 107, 194, and 246.
 - i. If confirmed or partially confirmed, please explain why these facilities were included in the data sample and discuss whether their inclusion could introduce bias into the model.
 - ii. If not confirmed, please provide the corrected results.
 - iii. Please provide your analysis for similar facilities with less than 10 months of data in the AFSM100 and FSS workhour regression models.
- b. Please confirm that for facility with site id 11, all but one available months of data were excluded from the DBCS regression analysis because they were deemed as extreme values.
 - i. If confirmed, please discuss whether it was appropriate to include such a facility into the sample used for regression model considering that the vast majority of monthly observations have been deemed as “extreme values” and excluded from the DBCS workhour regression analysis.
 - ii. If not confirmed, please provide the corrected results for DBCS workhour regression model.
 - iii. Please provide your analysis for similar facilities where the vast majority of monthly observations have been deemed as “extreme values” and excluded from the AFSM100 or FSS workhour regression models.
- c. Please refer to Table 1 below that provides the number and percentage of observations (by month) excluded from the DBCS workhour regression analysis as a result of labor productivity screening.

- i. Please confirm the results provided in Table 1 that in the months of November and December, a notably higher percentage of observations was excluded from the DBCS regression analysis than in the other months.
- ii. If the results shown in Table 1 are not confirmed, please provide the corrected results for DBCS workhour regression models.
- iii. Please provide a similar analysis for the AFSM100 or FSS workhour regression models.
- iv. If results provided in Table 1 are confirmed, please explain the reasons for such phenomena and discuss whether the exclusion of notably higher percentages of observations in the months of November and December, then in the other months, could introduce bias into the regression models.

Table 1
DBCS Workhour Regression:
Excluded Observations by Month (2016-2019)

Month	Included	Excluded	Total	% Excluded
[a]	[b]	[c]	[d]	[e] = [c]/[d]
1	756	86	842	10.21%
2	756	86	842	10.21%
3	756	85	841	10.11%
4	763	79	842	9.38%
5	754	88	842	10.45%
6	765	76	841	9.04%
7	764	77	841	9.16%
8	765	76	841	9.04%
9	766	75	841	8.92%
10	774	69	843	8.19%
11	739	103	842	12.23%
12	714	128	842	15.20%
Total	9,072	1,028	10,100	10.18%

Notes and Sources: Data are from "analysis_set.dta." Outliers identified using the following command in STATA: "generate outlier_flag = (!inrange(prod1, prod1_p5, prod1_p95)) if inrange(year, 2016, 2019) & !missing(l_tpf, l_hrs)."

8. Please refer to the Variability Report that states “[w]hile there is relatively little reason to expect that machine runtime should materially depend on workloads other than current-period TPF, workhours may have a longer adjustment process due to limitations on the flexibility of USPS labor. The inclusion of lagged TPF terms allows for adjustment processes of workhours with respect to workloads over longer time scales.” Variability Report at 20. Please also refer to the Response to CHIR No. 1 that states “the Postal Service uses same-period-last-year (SPLY) operating data reporting as a management tool, which is a potential channel by which previous-year operations may have some influence on current periods. The latter two factors militated in favor of including some lags, where the twelfth lag reflects SPLY effects and the first lag is intended to capture shorter-term labor inflexibilities.” Response to CHIR No. 1, question 2.a.
 - a. Please confirm that variabilities estimated in Proposal Six measure a causal effect of an additional letter/flat mail piece being fed into a machine (DBCS, AFSM100, or FSS) on workhours spent on operation of that machine in that month.
 - b. If question 8.a. is confirmed, please also confirm that the lagged TPF terms in the extended workhour regressions should have, as described above, causal effect on current workhours, through, but not limited to, the two factors mentioned in a quoted above statement.
 - c. If question 8.a. is not confirmed, please provide economic interpretation of the variabilities estimated in Proposal Six as well as the interpretation of the coefficients on the natural log of lagged TPF terms in the extended variability equations estimated in Proposal Six.
9. Please refer to the Postal Service’s list of processing facilities available at: https://about.usps.com/news/electronic-press-kits/our-future-network/processing_facility_types.pdf (Facility Fact Sheet); and to Library Reference USPS-RM2020-13/NP1, September 15, 2020, folder “Working

Datasets,” STATA data files “finlist07.dta” through “finlist19.dta” (Proposal Six Datasets) that include data for variable “type.” Please also refer to the Variability Report that states “[f]ailing to account for unobserved non-volume heterogeneity among facilities generally would lead to biased and inconsistent elasticity coefficient estimates.” Variability Report at 20.

- a. If the types of processing facilities in Facility Fact Sheet are outdated, please provide the most recent list of such facility types with the similar description.
- b. Please confirm that in Proposal Six Datasets, variable “type” identifies the facility type. If not confirmed, please describe variable “type.”
- c. For variable “type” in Proposal Six Datasets, please provide the description for different types, including, but not limited to “CSF,” “P&D,” and “PMF” similar to how it is done in Facility Fact Sheet.
- d. Please identify the types (by “type” variable) that were included in regression analysis underlying Proposal Six and, if applicable, explain why certain types were excluded.
- e. Please discuss whether volume-independent technological parameters (including, but not limited to, the three factors mentioned in the statement quoted from Variability Report) may differ systematically across types. Please provide relevant documentation or reference to relevant analyses.
- f. Please explain the reasons why the “type” variable was not ultimately included as a control variable in the extended regression models used to estimate variabilities in Proposal Six.

By the Chairman.

Robert G. Taub